

REMARKS/ARGUMENTS

Claims 1-36 remain in the application. Allowance of claims 10 and 22-24 is noted. Claim 10 is amended to incorporate the limitations of claims 1, 6 and 7 and claim 22 is amended to place the claim in independent form as suggested in the Office Action. Claims 1 and 32 are amended to address informalities. No new matter is added by these amendments.

A. Rejections under 35 U.S.C. 112.

Claims 1-36 were rejected under 35 U.S.C. 112. Claims 1 and 32 are amended to eliminate the term "quantity of data" in favor of "data" alone. The term "quantity of data" was intended to convey a set of data or amount of data of arbitrary size. Because the size of the amount of data is arbitrary the term "quantity of" is not believed to be necessary. It is respectfully requested that the rejection under 35 U.S.C. 112 be withdrawn.

B. Rejections under 35 U.S.C. 102.

Claims 1-4, 6-9, 11-13, 17-21, 25, and 28-36 were rejected under 35 U.S.C. 102 based upon Sicola. This rejection is respectfully traversed.

The filing date of Sicola et al. is March 30, 2000. The instant application is based on a provisional filing of February 18, 2000. Accordingly, Sicola is not believed to be available as a reference.

Independent claim 1 calls for, among other things, data distributed across a selected set of storage nodes. Sicola discloses a system in which two and only two data storage arrays are linked by a dedicated link (column 2, line 16). This hard connection between the array controllers in Sicola does not allow for the selection of storage nodes to provide a selected set of storage nodes as called for in claim 1. Accordingly, Sicola does not show this feature of claim 1.

Moreover, claim 1 calls for data to remain available irrespective of the availability of one or more of the storage nodes. As Sicola only discloses two linked storage nodes, unavailability of more than one storage node would render

the data unavailable. At least this feature of claim 1 is not shown or suggested in the relied on reference.

Claims 2-4 and 6-9 and 11-13 that depend from claim 1 are allowable over Sicola for at least the same reasons as claim 1 as well as the limitations that appear in those claims. For example, claim 2 calls for at least two storage nodes collectively implement a unitary volume of network storage. Sicola shows a storage sites that each hold a redundant copy of the data. Hence, a volume of network storage is implemented independently by each storage site in Sicola rather than collectively by at least two storage nodes as called for in claim 2. With respect to claims 3-4, Sicola shows two separate networks, but does not suggest anywhere that the network used to receive access requests is a public network.

Independent claim 17 calls for causing a storage node to implement a storage request using an arbitrary subset of the storage nodes. As set out above, Sicola does not show or suggest any mechanism that would enable one to implement a storage request in an arbitrary subset. The Sicola system includes two and only two "storage nodes". Both storage sites are used in a redundant fashion, hence, there is no concept of an arbitrary subset of storage nodes in Sicola. There is one and only one set of storage nodes and these are the nodes that are linked by the dedicated connection. Accordingly, claim 17 is not shown by Sicola et al. Moreover, nothing in Sicola would suggest the use of more than two storage sites.

Independent claim 28 calls for, among other things, a peer-to-peer network of storage devices. The redundant fibre channel-based system of Sicola is not a peer-to-peer network in the conventional meaning of that term. Sicola uses the term "peer-to-peer" to describe the nature of a fibre channel fabric, but does not discuss whether the storage devices are or can be configured as peers or enable one to make or use a peer-to-peer network of storage devices. Sicola et al. teach that at any given time one of the redundant

controllers is an initiator and another is a target. At any given time only one site is able to act as an initiator with respect to replication operations. These are clear indications that Sicola teaches against a peer-to-peer network of storage devices as called for in claim 28. Accordingly, claim 28 and claims 29-31 that depend from claim 28 are believed to be allowable over Sicola et al.

Independent claim 32 calls for storage management processes within the at least one storage node operable to distribute data storage across multiple storage nodes. Sicola et al. show a system in which data is replicated, not distributed. The replicated data in Sicola et al. represents a complete copy of the data and so the data is never "distributed" in the common meaning of that word. Accordingly, claim 32 is believed to be allowable over Sicola et al.

Independent claim 33 calls for storage management processes comprising program instructions executing in the storage node and responsive to the received data storage access requests and in communication with the network interface to distribute and coordinate data storage operations with external storage nodes. At least this element of claim 33 is not shown or fairly suggested by Sicola et al. The Sicola system involves two storage nodes, only one of which is available to receive storage access requests from a host and act as an initiator for replication operations at any given time. The array controllers do not appear to implement the processes involved in distributing and coordinating data storage operations with external storage nodes. The array controllers appear to handle storage request for their own storage devices, but the description of the failover/failback processes at column 4, lines 54-67 suggests that the hosts must coordinate storage operations between the two storage nodes in Sicola et al. Accordingly, claim 33 and claims 34-36 that depend from claim 33 are allowable.

C. Rejections under 35 U.S.C. 103.

Claim 5 was rejected under 35 U.S.C. 103 based upon Sicola in view of Laursen et al. and claims 14-16 and claims 26-27 were rejected based upon

Sicola in view of Dugan et al.. This rejection is respectfully traversed. Claims 5, 14-16, and 26-27 are distinct with respect to Sicola et al. for the reasons set out above in reference to claims 1 and 17. The secondary references do not supply the deficiencies set out above.

D. Conclusion.

The references that were cited but not relied upon are no more pertinent than the references that were relied upon. In view of all of the above, the claims are now believed to be allowable and the case in condition for allowance which action is respectfully requested. Should the Examiner be of the opinion that a telephone conference would expedite the prosecution of this case, the Examiner is requested to contact Applicants' attorney at the telephone number listed below.

Two new independent claims are added by this response bringing the total number of independent claims to seven. A check in the amount of \$400 for the two independent claims in excess of five previously paid for is enclosed herewith. Any fee deficiency associated with this submittal may be charged to Deposit Account No. 50-1123.

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Respectfully submitted,



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